The leaves, the calyx, externally as well as internally, and the capsules are markedly pubescent.

Beadle [1] describes from Tennessee as a species, *P. intectus*, but it is only a variety which has the leaves, capsules, and outer surface of the sepals glabrous or relatively so.[2]

P. PUBESCENS Lois. var. **intectus** (Beadle) A. H. Moore, n. comb.

P. intectus Beadle, Bilt. Bot. Studies, i, 160 (1902).

The differences are thus comparable to those between *P. coronarius* and its variety, *tomentosus*, above.

WASHINGTON, D. C.

THE AMERICAN VARIATIONS OF LYCOPODIUM ANNOTINUM.

M. L. FERNALD.

THE disposition of the American plants ordinarily passing as *Lycopodium annotinum* L. has often been a source of some perplexity to students in our Northern States and British America. As commonly interpreted the species consists with us of the so-called typical *L. annotinum*, with leaves spreading, and var. *pungens* Desv., with shorter more rigid erectish leaves. The chief difficulties which field-botanists in the North have encountered have arisen from the fact that in the region from Newfoundland to the Great Lakes and eastern Pennsylvania there are two quite pronounced variations of *L. annotinum* with spreading or even reflexed leaves. A study of the material in the Gray Herbarium and the Herbarium of the New England Botanical Club, 184 numbers, shows that the species in North America falls into four, instead of two, rather pronounced tendencies, the typical form of the species crossing the continent, the three varieties each with more restricted distribution. The following synopsis may be of interest to others as a basis for the recognition of these four variations.

[1] Bilt. Bot. Studies, i, 160 (1912).

[2] Indeed, Beadle, l. c., says of it: "From *P. latifolius* Schrad. this species may be recognized by the glabrous or glabrate leaves and by the absence of pubescence on the hypanthium and exterior surface of the sepals."

Leaves mostly spreading or reflexed, those of the fruiting branches 5.5–11 mm. long.
Leaves lanceolate, linear-oblong or oblanceolate, thinnish, distinctly serrate.....*L. annotinum.*
Leaves linear- or lance-attenuate, firm and thickish, entire or obsoletely serrate.....var. *acrifolium.*
Leaves strongly ascending or appressed, those of the fruiting branches 2.5–6 mm. long.
Leaves linear- or lance-attenuate, thick, dorsally convex, entire.
var. *pungens.*
Leaves lanceolate or lance-oblong, flat, obscurely serrate..var. *alpestre.*

L. ANNOTINUM L. Sp. Pl. 1566 (1753).— Eurasia and North America. Woods and clearings, Newfoundland to Alaska, south to Connecticut, New York, Michigan, Wisconsin, Colorado, Idaho and Washington.

Var. **acrifolium**, n. var., foliis lineari- vel lanceolato-attenuatis firmis crassis integris vel obsolete serratis patentibus vel reflexis.— Newfoundland to Pennsylvania, Michigan and Ontario; also Siberia. NEWFOUNDLAND: dry rocky clearings, Grand Falls, July 10, 1911, *Fernald, Wiegand, Bartram & Darlington*, no. 4366. QUEBEC: dry woods, Grindstone, Grindstone Island, Magdalen Islands, July 22, 1912, *Fernald, Bartram, Long & St. John*, no. 6696. PRINCE EDWARD ISLAND: dry open woods, Rocky Point, July 6, 1912, *Fernald & St. John*, no. 6695. NOVA SCOTIA: damp woods, North Sydney, July 21–25, 1901, *Howe & Lang*, no. 692. MAINE: woods, Fall Brook, north of St. Francis, July 21, 1908, *Churchill;* damp woods, Fort Kent, July 12, 1903, *Pease*, no. 2588; dry woods, Van Buren, July 24, 1893, *Fernald*, no. 213a; dry woods, Orono, October 13, 1890, *Fernald;* dry woods, Dover, September 4, 1894, *Fernald*, July 22, 1895, *Fernald* (TYPE in herb. New England Botanical Club). NEW HAMPSHIRE: White Mountains, 1842, *A. Gray*, July 28, 1853, *Wm. Boott;* ledge, Randolph, July 24, 1893, *E. F. Williams;* Shelburne, September, 1893, *Farlow;* summit of Starr King, September 15, 1897, *W. Deane;* woods, Colebrook, July 15, 1907, *Pease*, no. 10,443; foot of Moat Mt., North Conway, August 26, 1878, *W. C. Lane;* rich woods, Jaffrey, July 9, 1897, *Robinson*, no. 189; cold wet woods, Contoocook, October 11, 1899, *F. G. Floyd.* VERMONT: Jay Peak, July 7, 1908, *E. J. Winslow.* MASSACHUSETTS: Chebacco woods, Essex, September 19, 1896, *Raynal Dodge;* low woods, Cold Brook Springs, Oakham May 12, 1912, *Fernald & Wiegand;* woods, Ashfield, August 2, 1909, *E. F. Williams*, woods, Buckland, August 23, 1906, *F. F. Forbes.* CONNECTICUT: pine woods, Winchester, June 25, 1901, *C. H. Bissell.* PENNSYLVANIA: Moraine, Pocono Plateau, July 25, 1904, *J. W. Harshberger.* MICHIGAN: Hamlin Lake, Ludington, July 28, 1910, *R. W. Chaney*, no. 21; woods near Lake Michigan, August 17, 1901, *M. A. Barber.* ONTARIO: Onaman River, Thunder Bay District, 1912, *H. E. Pulling.* SIBERIA: River Pjosscha, Samojed, *Schrenk.*

Var. PUNGENS (La Pylaie) Desv. Mém. Soc. Linn. Paris, vi. 182

(1827); Spring, Mon. Lycop i. 78 (1841). *L. pungens* La Pylaie acc. to Desv. l. c.—Exposed rocky or peaty habitats, Greenland, Labrador and Newfoundland to the mountains of northern New England, the eastern coast of Maine, and northern Minnesota; also eastern Asia; and in the Tyrol (according to Luerssen).[1]

Var. ALPESTRE Hartm. Skand. Fl. ed. 2, 294 (1832).—Northern Europe and northwestern North America. BRITISH COLUMBIA: Mt. Arrowsmith, Vancouver Island, July 17, 1887, *J. Macoun*, no. 11,519. ALASKA: top of high hill, Ilinlink, Unalaska, October 1, 1871, *M. W. Harrington*.

Vars. *alpestre* and *pungens* seem to be the alpine and boreal extremes of the two woodland plants of more temperate habitats, true *L. annotinum* and var. *acrifolium*. It is specially noteworthy, therefore, that the flat- and broad-leaved var. *alpestre* of northern Europe should have been found in North America only at the northwestern edge of the continent, although in the East the flat- and broad-leaved typical woodland *L. annotinum* abounds. It is also noteworthy that the two plants with firm rigid entire and acerose-attenuate leaves, vars. *acrifolium* and *pungens*, widely distributed in northeastern America, should be unknown from western North America and rare or unknown in Europe, but both present in northern Asia. The ranges of these varieties thus fall essentially into the definite groupings — Europe and western America, eastern America and Asia — already familiar in hundreds of other cases.

GRAY HERBARIUM.

ANTENNARIA CANADENSIS IN PENNSYLVANIA.

HAROLD W. PRETZ.

IN his article, entitled "Southerly Range Extensions in Antennaria,"[2] Mr. Bayard Long makes the following statement: "Although *Antennaria canadensis* has not yet, to the best of my knowledge, been collected between the Catskills and Natural Bridge, I feel that

[1] Luerssen does not recognize var. *alpestre*, and it is probable that the plant of the Tyrol referred by him to the American var. *pungens* may prove to be the European var. *alpestre*.

[2] RHODORA XV. 121 (1913).